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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/660,255 | 09/12/2000 | Russell Byrd | 42390.P8718 | 6781 |

7590

07/13/2004

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| EXAMINER |
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PHAM, TUAN

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| ART UNIT | PAPER NUMBER |
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2643

DATE MAILED: 07/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/660,255

Applicant(s)

BYRD ET AL.

Examiner

TUAN A PHAM

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 June 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 15-26 is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed on 06-09-2004 have been fully considered but they are not persuasive.

Applicant traverses the rejection to claim 1 by mainly arguing that there is no suggestion or motivation to combine admitted prior art as shown in figure 1 and Frantz et al. (U.S. Patent No.: 5,802,169). The examiner respectfully disagrees with the applicant's arguments as stated above. The admitted prior art uses a fixed resistor 130 for matching impedance of the subscriber line interface and replacing with another resistor having different values every time for supporting different protocols. Such replacing of resistor every time is inconvenient for who is maintenance the system. However, Frantz teaches an adjustable resistor 112 for automatically changing the impedance value for matching against unknown line impedances to support for different protocols. The reason for impedance matching is to maximize the power transfer over communication line (see col.4, ln.19-36). Therefore, there is a suggestion or motivation to combine the teaching of Frantz into the admitted prior art since the resistor does not need to be replaced every time for supporting different protocols and thus the convenient can be achieved.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over admitted prior art in view of Frantz et al. (U.S. Patent No. 5,802,169, hereinafter, "Frantz").

Regarding claim 1, the prior art teaches a line interface for coupling to a first transport medium (see figure 1), the line interface comprising:

an external resistor coupled in parallel with the transceiver to provide a first effective impedance to substantially match an impedance of the first transport medium (see figure 1, resistor 130, transceiver 150).

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It should be noticed that the prior art fails to teach an integrated circuit comprising a programmable resistor (i.e. adjustable hybrid circuit). However, Frantz teaches such features (see figure 1, adjustable hybrid circuit 111, col.3, ln.55-63) for a purpose of automatically determining the impedance of a subscriber line interface.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the use of an integrated circuit comprising a programmable resistor, as taught by Frantz, into view of prior art in order to improve the maximum the power transfer of a subscriber line interface.

5. Claims 2-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over admitted prior art in view of Frantz et al. (U.S. Patent No. 5,802,169, hereinafter, "Frantz") as applied to claim 1 above, and further in view of Armistead et al. (U.S. Patent No. 6,553,117, hereinafter, "Armistead").

Regarding claim 2, prior art and Frantz, in combination, fails to clearly teach the programmable resistor and the external resistor are coupled to provide a second effective impedance to substantially match an impedance of a second transport medium, wherein the impedance of the first transport medium is different from the impedance of the second transport medium. However, Armistead teaches such features (see col.6, ln.1-17) for a purpose of automatically determining the impedance of a subscriber line interface.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the use of the programmable

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resistor and the external resistor are coupled to provide a second effective impedance to substantially match an impedance of a second transport medium, wherein the impedance of the first transport medium is different from the impedance of the second transport medium, as taught by Armistead, into view of prior art and Frantz in order to improve the maximum the power transfer of a subscriber line interface.

Regarding claim 3, Armistead further teaches the line interface wherein the impedance of the second transport medium substantially matches 75 ohms, 100 ohms or 110 ohms (see col.6, ln.20-29).

Regarding claim 4, Armistead further teaches the line interface wherein the first transport medium is a T1 line and the second transport medium is a J1 line (see col.4, ln.45-65).

Regarding claim 5, Armistead further teaches the line interface wherein the first transport medium is a T1 line and the second transport medium is an E1 line (see col.4, ln.55-60).

Regarding claim 6, Frantz further teaches the line interface wherein the programmable resistor and external resistor are coupled to provide a second impedance to substantially match an impedance of a second transport medium responsive to a write to a register of the integrated circuit (see col.6, ln.5-20).

Regarding claim 7, Armistead further teaches the line interface wherein the impedance of the first transport medium substantially matches 75 ohms, 100 ohms or 110 ohms (see col.6, ln.20-29).

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Regarding claim 8, Armistead further teaches the line interface wherein the programmable resistor can be disabled, and wherein the external resistor substantially matches 120 ohms (see col.6, ln.20-29).

Regarding claim 9, Armistead further teaches the line interface wherein the integrated circuit comprises a second programmable resistor to couple to a secondary transport medium (see col.6, ln.1-15).

Regarding claim 10, Armistead further teaches the line interface wherein the first transport medium has a first impedance and the secondary transport medium has a second impedance, and wherein the first impedance is different from the second impedance (see col.4, ln.50-60).

Allowable Subject Matter

6. Claims 15-26 are allowed.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for response to this final action is set to expire **THREE MONTHS** from the date of this action. In the event a first response is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event will the statutory period for response expire later than **SIX MONTHS** from the date of this final action.

Any response to this final action should be mailed to:

Box AF

Commissioner of Patents and Trademarks

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Washington, D.C. 20231
or faxed to:
(703) 872-9314 (for formal communications; please mark
"EXPEDITED PROCEDURE")

Or:
If it is an informal or draft communication, please label
"PROPOSED" or "DRAFT")

Customer Service (703) 306-0377
Hand-delivered responses should be brought to Crystal Park
II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Tuan A. Pham** whose telephone number is (703) 305-4987. The examiner can normally be reached on Monday through Friday, 8:00 AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Curtis Kuntz can be reached on (703) 305-4708 and
IF PAPER HAS BEEN MISSED FROM THIS OFFICIAL ACTION PACKAGE,
PLEASE CALL Customer Service at (703) 306-0377 FOR THE
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Information regarding the status of an application may be obtained from the
Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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Should you have question on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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June 26, 2004

Examiner

Tuan Pham


CURTIS KUNTZ
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600